

REMARKS

The present Amendment is in response to the Examiner's Office Action (hereinafter referred to as "Office Action") mailed September 8, 2005. Claims 1-20 were pending at the time of the last examination. By this amendment Claims 7 and 18 are cancelled, Claims 1, 8, and 12 are amended, and new Claims 21 and 22 are added. Claims 1-6, 8-17, and 19-22 are now pending in view of the above amendments.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicants request that the Examiner carefully review any references discussed below to ensure that Applicants understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

Amended Drawings

The Office Action in Section 1 objected to various drawings because block diagrams 104, 106, 116 in Figure 1, 232 in Figure 2, and 614 in Figure 6B were not labeled. Applicants submit new Figures 1, 2, and 6 which label the designated block diagrams. Also enclosed is a redlined copy of Figures 1, 2, and 6 showing the change being made.

In addition, Section 1 of the Office Action objected to the vertical labeling of Figure 5. In response, Applicants have amended the vertical labeling so that the numbers are not the same. Applicants submit new Figure 5 with the amended vertical labeling. Also enclosed is a redlined copy of Figure 5 showing the change being made. Applicants note that no new matter has been added as the vertical labeling has been amended to match the vertical labeling of Figure 4 of U.S. Provisional Application No. 60/423,175, which was incorporated by reference by the pending application. Withdrawal of this ground of rejection is respectfully requested.

Section 2 of the Office Action states that the current mirror in Claims 4 and 9 and the current transformer in Claims 6 and 11 are not shown in the figures. As stated in paragraph 46 of the specification, the current mirror and the current transformer are examples of a current monitor. Accordingly, Applicants have amended Figure 6 to show a current monitor. Applicants respectfully assert that new Figure 6, by showing a current monitor, also shows the features in question. In addition, Applicants note that no new matter has been added to Figure 6 as the current monitor in Figure 6 is mentioned in at least paragraph 46 of the original specification. Withdrawal of this ground of rejection is also respectfully requested.

Specification

Section 3 of the Office Action objects to informalities in paragraphs 36, 39, 40, and 46 for various informalities. As listed above, Applicants have amended these paragraphs to correct the informalities as listed in the Office Action. In addition, Applicants have amended paragraphs 29, 35, and 41 to correct small typographical errors.

Applicants have further amended paragraph 46 to match amended Figure 6. Specifically the current monitor that was already discussed was given a label of "616" as in the amended

figure. Accordingly, no new matter has been added. Applicants therefore respectfully request that the objections to the specification be removed

Rejection Under 35 U.S.C. § 112, Second Paragraph

The Office Action in Section 4 rejects Claims 1-7 under 35 U.S.C. § 112, Second Paragraph for indefiniteness on the grounds that Claim 1, lines 10-11 includes the incomplete sentence “wherein the doping thickness product.” In response, Applicants have deleted the incomplete sentence from Claim 1.

The Office Action in Section 4 also rejects Claims 12-20 under 35 U.S.C. § 112, Second Paragraph for indefiniteness on the grounds that Claim 12, line 6 includes a recitation that an element is “capable of” performing a function. Applicants respectfully point out the term “capable of” does not appear anywhere in Claim 12. Applicants therefore ask that more clarification be provided if this rejection is to be maintained. Accordingly, Applicants respectfully assert that all 35 U.S.C. § 112, Second Paragraph rejections have been overcome and request that the rejections be removed.

Rejections Under 35 U.S.C. § 103

The Office Action in Sections 6-7 rejects Claims 1-6, 8-17, and 19-20 under 35 U.S.C. § 103(a) as being unpatentable over Vickers (US Patent Publication No 2004/0106265) in view of Hofmeister (US Patent Publication No. 2003/0178552)¹. In addition, section 8 of the Office

¹ Although the prior art status of the cited art is not being challenged at this time, Applicants reserve the right to challenge the prior art status of the cited art at any appropriate time, should it arise. Accordingly, any arguments and amendments made herein should not be construed as acquiescing to any prior art status of the cited art. Since the combination of Vickers and Hofmeister do not teach or suggest all of the recited features, it is not necessary at this time for a full response to address the issue of whether or not the combination is appropriate. The Applicants reserve the right to argue against the combination should future action by the Office necessitate such arguments.

Action indicated that Claims 7 and 18 would be allowable if rewritten to include all of the limitations of their respective base claims.

Claims 1 and 12

Applicants have amended Claim 1 to include the limitations of prior Claim 7. Specifically, Claim 1 has been amended to include the limitation of Claim 7 that lowering the doping thickness product lowers a punch-through voltage and raises a breakdown voltage to increase the dynamic range. Accordingly, Claim 1 (as amended) is similar in scope to the prior Claim 7, only in independent form. Accordingly, as implied by the Office Action, Claim 1 should now be allowed. Claims 2-6 depend from Claim 1, and should therefore be patentable for at least the reasons that Claim 1 is patentable.

Likewise, Applicants have amended Claim 12 to include the limitations of prior Claim 18. Specifically, Claim 12 has been amended to include the limitation of Claim 18 that lowering the doping thickness product lowers a punch-through voltage and raises a breakdown voltage to increase the dynamic range. Accordingly, Claim 12 (as amended) is similar in scope to the prior Claim 18, only in independent form. Accordingly, as implied by the Office Action, Claim 12 should also now be allowed. Claims 13-17 and 19-20 depend from Claim 12, and should therefore be patentable for at least the reasons that Claim 12 is patentable.

Applicants acknowledges with thanks the indication of the Office Action that Claims 1 and 12 as amended with the limitations of Claims 7 and 18 respectively are allowed, and Applicants also wishes to thank the Examiner for the careful review of those claims.

Applicants submit the following comments concerning the Examiner's statements of reasons for the indication of allowable subject matter in the Office Action. In general, Applicants agree with the Examiner that the inventions to which Claims 1 and 12 are directed are

patentable over the cited references, but respectfully disagrees with the Examiner's statement of reasons for allowance as set forth in the Office Action.

Particularly, Applicants submit that it is improper to characterize a single limitation, or subset of limitations, as constituting the basis for allowance of a claim. Rather, the patentability of a claim is properly determined with reference to the claim as a whole. Accordingly, Applicant does not concede that the reasons for allowable subject matter given by the Examiner are the only reasons that make, or would make, the claims allowable and Applicant does not make any admission or concession concerning the Examiner's statements in the Office Action concerning the allowability of Claims 1 and 12 in view of the cited references.

Claim 8

Applicants respectfully assert that amended Claim 8 is not made obvious or anticipated by Vickers and Hofmeister for at least the reason that neither Vickers nor Hofmeister, either singularly or in combination, teach each and every element recited in Claim 8. For example, neither Vickers nor Hofmeister teach that adjusting a doping thickness product adjusts a punch-through voltage and a breakdown voltage to cause an adjustment in a dynamic range or a peak sensitivity. Claim 8 is therefore patentable over the cited art for at least this reason. Claims 9-11 depend from Claim 8, and should therefore be patentable for at least the reasons that Claim 8 is patentable. Accordingly, Applicants respectfully request that the 35 U.S.C. § 103(a) rejections for Claims 8-11 be removed.

Claim 21

Applicants have added a new Claim 21². Applicants respectfully assert that new Claim 21 is not made obvious or anticipated by Vickers and Hofmeister for at least the reason that

² New Claim 21 is supported at least by paragraphs 32-34 of the original specification.

neither Vickers nor Hofmeister, either singularly or in combination, teach each and every element recited in new Claim 21. For example, neither Vickers nor Hofmeister teach that adjusting a doping thickness product adjusts a punch-through voltage and a breakdown voltage to cause an adjustment in a dynamic range or a peak sensitivity. Claim 21 is therefore patentable over the cited art for at least this reason. Claim 22 depends from Claim 21, and should therefore be patentable for at least the reasons that Claim 21 is patentable.

CONCLUSION

In view of the foregoing, Applicants believe the claims as amended are in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorneys.

Dated this 9 day of January, 2006.

Respectfully submitted,


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Amendments to the Drawings:

The attached sheets of drawings include changes to Figures 1, 2, 5 and 6. The sheet which includes Figures 1 and 2 replaces the original sheet including Figures 1 and 2 and the sheet which includes Figures 5 and 6 replaces the original sheet including Figures 5 and 6.

Attachment: Replacement Sheet
Annotated Sheet Showing Changes



APPENDIX



Title: CONTROLLING THE DYNAMIC RANGE OF AN AVALANCHE PHOTODIODE
 Inventor: J. Christopher Dries, Darin J. Douma and Rudolf J. Hofmeister
 Docket No.: 15436.250.33.1

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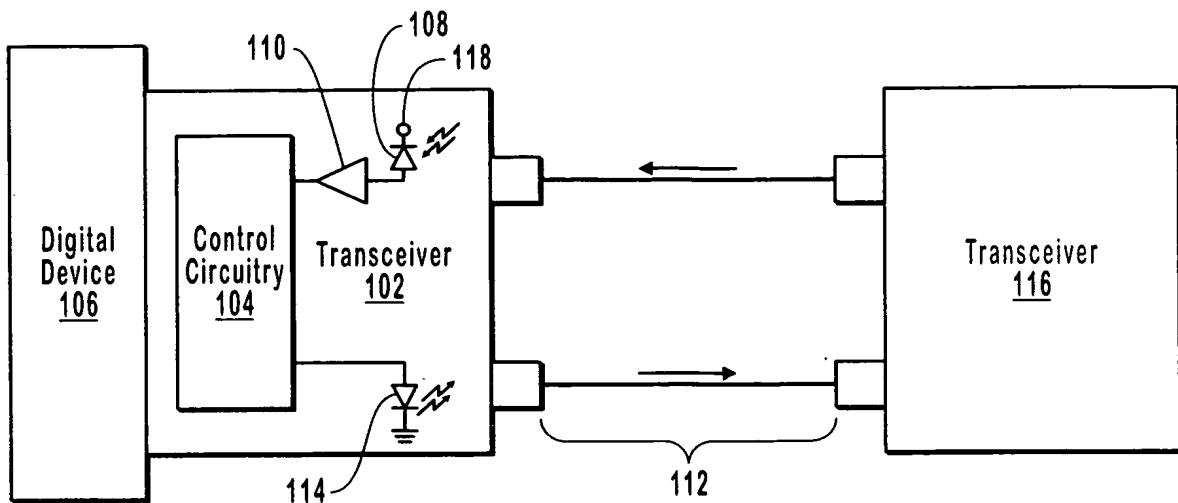


Fig. 1

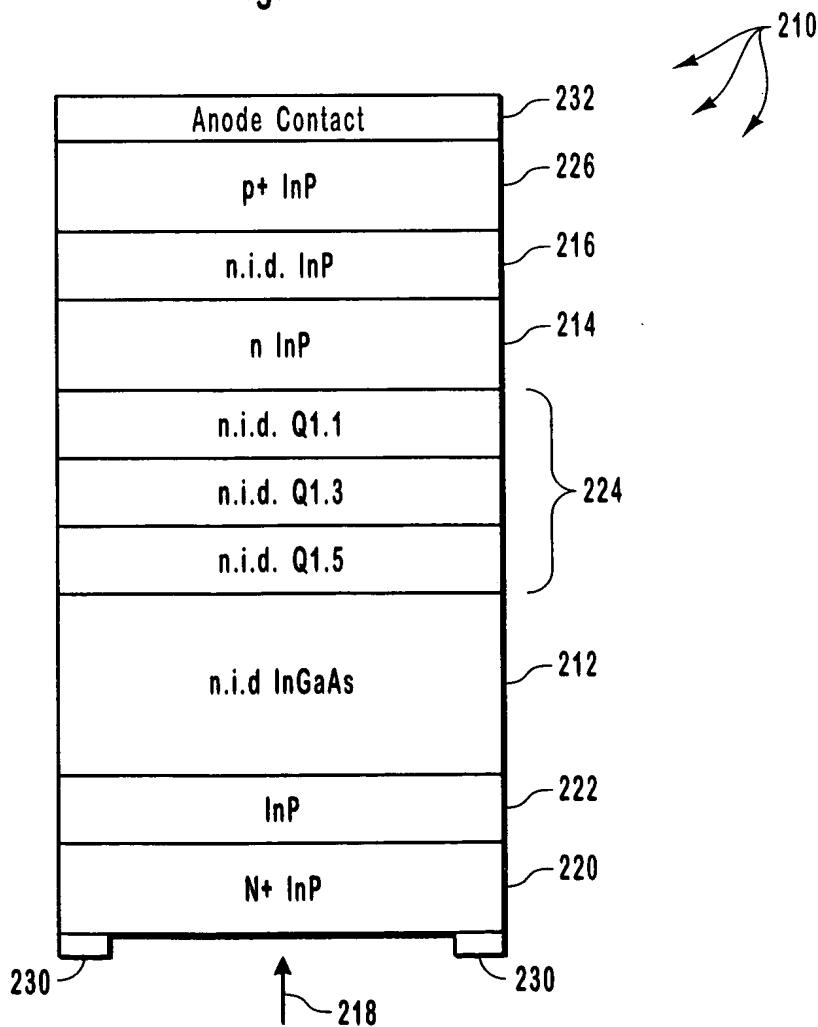


Fig. 2

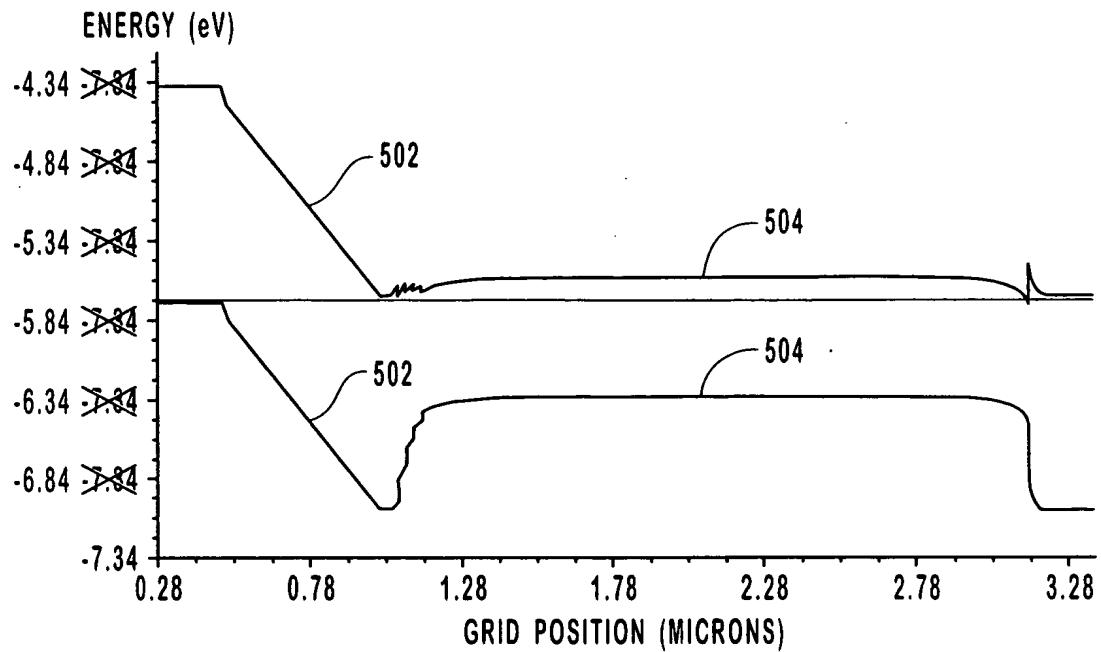


Fig. 5

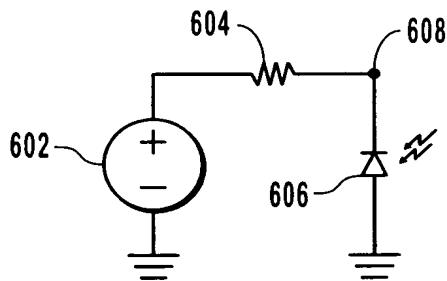


Fig. 6A

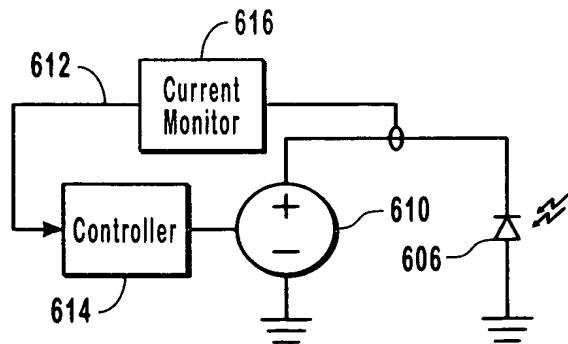


Fig. 6B